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ABSTRACT

Fifty young adults (and one 82-year-old) identified as creative by graduate students were interviewed. Content analysis was performed on information from the interviews, which usually addressed 10 questions on the individual's perceptions of creativity, interests, definition of creativity, creative processes, facilitating conditions, and obstacles to creativity. Data are reported for each question, followed by discussion and interpretation sections. Methodological difficulties with the interview formats are considered. The three appendixes provide excerpts in which interviewees describe their creative processes. (CL)

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The Creative Among Us

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Abraham H. Maslow (1968) described some of his misconceptions and expectations about creative people, and how these expectations were broken up by various subjects he encountered as he studied a "wide-spread kind of creativeness which is the universal heritage of every human being . . ."

> For instance, one woman, uneducated, poor, a full-time housewife and mother, did none of these conventionally creative things and yet was a marvellous cook, mother, wife, and homemaker. With little money, her home was somehow always beautiful. She was a perfect hostess. Her taste in linens, silver, glass, crockery, and furniture was impecable. She was in all these areas original, novel, ingenious, unexpected, inventive. I just had to call her creative; I learned from her and others like her that a first-rate soup is more creative than a second-rate painting, and that, generally, cooking or parenthood or making a home could be creative while poetry need not be, it could be uncreative . . . (p.135)

Therefore, this study is based on the assumption that creative ability is a "widely distributed, general potentiality not limited to the gifted or those in specific fields of human endeavor" (Zirbes, 1959, p. 3). The evidence is abundant that living with us, around, and among us are plenty of creative human beings whose way of solving the problems of work, home, and play just have to be considered creative.

Although there have been many studies researching the personality characteristics of the creative person, most have centered on publicly known figures. Few studies, to date, have attempted to investigate the creative abilities of people in the private sector, that is, unknown individuals--those we count as personal acquaintances.

A wide variety of personality characteristics that differentiate the creative individual from others has been researched. Knowledge of these characteristics comes from studies using various techniques, such as case studies, surveys, biographical inventories, and psychological tests. Subjects used for these studies, with the exception of those techniques using psychological tests, have generally been identified as highly creative individuals before investigations occur. Criteria used for the identification of the highly creative individual have relied on "generally acknowledged creativity", secondary sources (data relating to the life history of famous people), expert judgment, and quantity of products (Stein, 1974, pp. 55-62).

The difficulty in restricting our investigations of the creative personality to "generally acknowledged creativity", or "dictionaries of famous people", etc., is that these magnificent examples tend to cause us to look for examples of creativity in endeavors that "awe" humanity rather than accepting and applauding this vital ability in those with whom we share our lives.

Research involving the personality characteristics of creative people has been one of the most productive areas in creativity. Summarizing and evaluating research, Dellas and Gaier (1970) and Gowan (1972) report that highly creative individuals share distinctive traits. A number of lists of traits common to creative individuals are available, e.g., Nelson (1965), Schaeffer (1973), Taylor (1964), and Wechler (1961). Some studies

list as many as 84 characteristics which may be attributed to creative individuals. Stein presents research studies related to 19 characteristics and reminds the reader that:

> These findings do not characterize any one single individual. No creative individual has all these characteristics but a creative person probably has more of them than does a less creative person.

The California State Department of Education publishes the following list of characteristics as those most frequently occurring in studies (Frost, 1977, p. 60).

curious	sensitive
original	intuitive
independent	energetic
imaginative	persistent
nonconforming	fluent
perceptive	elaborative
flexible	sense of humor
open	complex

The literature reveals that the creative person is an achieving person. Indeed, one of the bases under which creative people are selected for study is "generally acknowledged creativity" where those whose achievements have stood the test of time. Another criterion for selection of creative people for study has been the quantity of novel products the individual has produced. Also, the procedure based on "expert judgment" uses research of consequence as an identification procedure (Stein).

Maslow (1968) discusses the basis of self-actualizing creativity which stresses first the personality rather than its achievements, "considering these achievements to be epiphenomena emitted by the personality and therefore secondary to it".

Maslow continues:

> self-actualizing creativeness which sprang much more directly from the personality, and which showed itself widely in the ordinary affairs of life, for instance, in a certain kind of humor. It looked like a tendency to do anything creative; e.g., housekeeping, teaching, etc.

Taylor (1963) found that the creative individual sees himself as creative and some studies (Barron, 1957; MacKinnon, 1959; and R. K. White, 1931) confirm that the creative person has wide-ranging interests and is versatile. Cattell and Butcher (1968) summarize the characteristics of creative scientists as follows:

> Last, these people have quite exceptional degrees of intellectual self-sufficiency. They depart freely from all the customary judgments of the world, yet are not appalled by their isolation. They appear, indeed, barely to notice that they are eccentric, and they expect as a natural right the freedom to be "odd" that they themselves would fairly grant to others, but that the average man is often quite unwilling to grant. In personality research, a dimension of this kind, labeled Q_2 in our series, has long been known. It is interesting to see that what it usually connotes--a rich supply of inner resources and interests--is typically present in the biographical evidence, too.

In addition to the above information, there are two other points that might be made concerning the range of interests and/or hobbies of the creative person. George I. Samstad (1962, p. 336) discusses the criteria used for making the selection of students in the fields of engineering and physics. He indicates that outside interests and activities usually give some indication of a more creative potential in engineering. Often hobbies are good clues. Also, the development of interests has been suggested as an educational technique for furthering training for creative innovation (Arnold, 1962, p. 138).

Definitions of creativity vary. Some are formulated in terms of a product, while others are formulated in terms of a kind of person or a set of conditions (Torrance, 1974). The most often used definitions are formulated in terms of a process. Knowledge of the creative process is derived almost wholly from studies of creative individuals selected by many different criteria. These creative individuals generally agree that creativity is a process as a result of which novelty is achieved (Stein). While there isn't complete agreement as to the exact nature of the process (Torrance), nearly everyone working in the field accepts the cognitive abilities of fluency, flexibility, originality, and elaboration as being associated with creativity (Klausmeier, 1971, p. 309). Other abilities such as curiosity, risk-taking, complexity, and imagination are also associated with creativity (Williams, 1970).

The creative process has been described in a variety of ways. Among the early descriptions of the process is one presented by Wallas (1926) as a systematic description in terms of preparation, incubation, illumination, and verification. Other early descriptions were contributed by Whiting (1958) who described the process as saturation, incubation, and illumination. Miel (1961, pp. 22-41), citing on the work of Mooney in describing the process, elaborated as follows:

> There are four major aspects of the process which, taken together seem to account for creativity: openness to one's own experiencing, focusing on one's experiencing, the discipline of one's actions to work out the focus, and closure--bringing the work to an end.

More recent descriptions of the creative process have been developed by Stein (p. 14) and Torrance (1974). Stein describes the process as:

> . . . hypothesis formation, which starts after preparation and ends with the formation of a tentative idea or plan; hypothesis testing, which involves determining whether or not the idea will stand up under careful scrutiny and testing; and communication, which involves presenting the final product so that others may react to and possibly accept it.

One of the most productive descriptions has been that offered by Torrance. The description is as follows:

> . . . a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on: identifying the difficulty, searching for solutions, making guesses, or formulating hypotheses about the deficiencies; testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.

The process used by the Creative Problem Solving Institute in its long and continuous training program to develop creative problem solving is also worth noting. When first suggested, the process included three steps: 1) fact finding; 2) idea finding; 3) solution finding (Osborn, 1963). Presently, the process includes (Noller, Parnes, Biondi, 1976, p. 1):

1) fact finding: gathering and analyzing data in preparation for defining the problem

2) problem finding: analyzing problematic areas in order to pick out and point up the problem to be attacked

3) idea finding: idea production--thinking up, processing, and developing numerous possible leads to solution

4) solution finding: evaluating potential solutions against defined criteria

5) acceptance finding: adoption--developing a plan of action and implementing the chosen solution

While there are a number of descriptions of a process, there is a great deal of agreement among them and there are a number of characteristics common to all of them (Stein, pp. 14-15). Some of them are listed below.

1) . . . the stages of the creative process do not occur in a systematic and orderly manner

2) . . . creative man has spent a great deal of time or smaller amounts of time used intensively in formal or informal preparation, training, or education in the field in which he works

3) The creative individual also makes a selection of a problem or a project on which he will work . . .

4) The process does not run off smoothly from start to finish . . . it continues or incubates on unconscious or nonconscious levels and from this . . . there is a growing conscious awareness of new possibilities . . .

5) A sense of knowing . . . that signals the completion of the work

6) . . . the resultant of the creative process is something novel

The assumption that creative ability can be enhanced through providing environmental conditions that encourage its functioning (Parnes, 1967) is fairly well accepted. Alex Osborn (1963) emphasized the importance of "praise" in helping creativity to bloom. He also reminded us of the destructive forces, "unfriendliness" and "wise cracks" and how they can discourage creative endeavors. More recently, Klausmeir emphasized the need for teachers and parents to "examine their own attitudes toward the behavior of children and try to decide honestly" the creative characteristics of children that are "associated with warm and accepting behavior by adults". Finally, Parnes (1967) suggests

that "the individual can use more of his potential when he is in a creative climate".

The writings of Alex Osborne (1963, pp. 39-68) referred to the cramping effect of blocks such as previous habits, self-discouragement, timidity, discouragement from others, etc. Most recent blocks identified through research have focused on the negative problem-solving set (Ellis, 1972; Posner, 1973), functional fixity (Dunker, 1945; Posner, 1973), and memory limitations in problem solving (Lindsay and Norman, 1972; Newell and Simon, 1972). Alamshah (1972) categorized "blockages to creativity" as socioeconomic, psychological, or characterological.

Whereas for most of the history of mankind, creativeness was thought to be the prerogative of a few (Hallman, 1964), more and more psychologists believe that creative potential lies in every individual. Jones (1972) reports a statement attributed to Zeitgeist as follows: "The genius stands out because he is extraordinarily well endowed with creative abilities, and his ideas belong to the climate of the times in which he lives." Jones continues, "But there are different degrees of genius. Variation is not confined to the eminently creative; it extends down through the population, the vast majority of which is inconspicuous in this respect."

Particularly the self-actualizing theorists (Maslow, 1968) and those who follow this theory would adhere to the assumption

that each person has potential for being creative and that creativity can be actualized at any age.

The notion that creative ability can be developed is fairly well accepted. As yet, however, there is no comprehensive theory of instruction; but a number of experiments seem to confirm that it is not only possible to develop it but also extremely desirable (Jones).

A thorough description of programs designed to enhance creative ability in adults is presented by Stein (1975). He discusses programs designed to encourage brainstorming, creative problem solving, synetics and other individual and group techniques. Klausmeier discussed briefly several programs for developing creative problem solving ability.

Ruth Strang (1977) gears her suggestions for developing creativity to children and young people. She suggests that creativity may be developed by:

providing general conditions or an atmosphere conducive to creativity

offering opportunities and materials for exploration

building a background of knowledge and skill

giving examinations that call for creativity

encouragement and reinforcement

In addition to the literature related to the development of creativity, several sources are available for enhancing this important ability in children. Some have been published by authors who have trained teachers and observed the positive

effects of using techniques directed toward increasing creative ability. Among such authors are Myers and Torrance (1966), Renzulli (1973), Shilcock (1980), and Williams (1970). Other sources have been published as a result of federal grants directed toward discovering ways to build procedures into the curriculum that keep creative abilities alive and growing. Among such projects are: Igniting Creative Potential (Project IMPLODE, 1971), TAP--Talent Activity Packet (Talents Unlimited Developer Demonstration Project, 1978), and Celebration of Creativity Catalogue (Frost). There are also materials available for helping very young children in furthering their creative ability. D.O.K. Publishers of Buffalo, New York, lists several fine sources for the young child.

The recent interest in gifted and talented education has also produced a number of sources directed toward encouraging creativity. Some of these contain a wealth of material and can be extremely helpful in establishing the kind of overall environment necessary for furthering creative growth. Two examples of sources are Self-Directed Study Guide on the Education of the Gifted and the Talented by Treffinger and Curl (1976) and Star Power (1977).

Method

The subjects in this study included fifty individuals seen as creative by graduate students who were registered for a course entitled, "Creative Thinking: Gifted and Talented", during the academic years of 1978-1981. Students were assigned to interview

a person they considered creative. The interview assignment came after students were exposed to studies involving the personality characteristics of creative people, and was designed as part of an effort to help students identify creative behavior. The assignment reads as follows:

1. Write a statement which describes a creative person. Write this statement in your own words without reference to material on "characteristics of the creative person" listed in the course bibliography.

2. Check your statement against those given in the course bibliography. Write a paragraph designed to compare your statement with that in the basic source--how do the statements differ?

3. Make a list of the five characteristics you feel are most important in describing a creative person.

4. Identify a person you consider creative. The person you identify must possess at least five of the characteristics we have studied. Interview the person you have selected to determine whether or not your initial impression of your subject is confirmed. What personality characteristics of the creative person does your subject possess? (Interview questions will be discussed in class.)

5. Summarize your interview. Is your subject more creative than you initially supposed, about as creative, or less creative? Qualify your decision by citing at least five examples from the interview that support your conclusions.

At the time of the class discussion, a list of 19 personality characteristics identified through research (Stein) were presented and discussed. After possible interview questions were suggested, students formed their own individual interviews. When completed, these were shared with others in the class. Suggestions were given by other students as well as the author.

The subjects selected for this analysis were those adults who were identified by the interviewer, from the information

obtained through the interview, as possessing average or above average creative ability. Subjects included 24 women and 26 men ranging in age from young adults to one 82-year-old retired school teacher and administrator. A number of occupations were represented, with educators at all levels comprising 38 percent of the subjects. This group included teachers, specialists, school psychologists, and administrators. Twenty-five percent were connected with the art field in some way such as commercial artist, industrial artist or designer, potter, and painter, etc. Other occupations listed in order of occurrence included business people, homemakers, managers (supervisors), musicians, computer specialists, research scientists, priests, sales representatives, speech pathologists, and waitresses. From the information available, only three subjects had any formal training in developing their creative abilities. One person attended the Synectics Education Systems Training Program (Synectics, Inc., Cambridge, Massachusetts), another worked with a supervisor who used techniques gained at the Creative Problem Solving Institute (Buffalo, New York) and the third referred to the use of the scientific method which indicates that his training provided experience in its use. The study was conducted in a large metropolitan area and the subjects are from various locations within that area.

Content analysis was used to code the information contained in the fifty interviews of people identified as creative. The analysis focused on the following questions.

1. What characteristics do you see in yourself that

contribute to your creativity?

2. What have you accomplished that you consider creative?
3. What are your interests and/or hobbies?
4. Do you see yourself as a creative individual?
5. Who do you see as a creative person?
6. What is your definition of creativity?
7. Do you have a process you use (go through) when you create?
8. Who helped (encouraged) you to pursue your creative endeavors?
9. What conditions have blocked, stifled, or inhibited your creative ability?
10. Can creativity be developed or encouraged? How can creativity be enccuraged or developed in others?

Interviewers constructed their own interviews and gave consideration to the person they selected. Therefore, not every interviewer asked the same questions or proceeded through the interview in the same way. Some interviewers recorded only brief responses, while others recorded lengthy discourses in response to specific questions. Some interviewers used a tape recorder to record everything, while others made notes as their subject responded. As the questions asked were diverse, a separate analysis was undertaken for each question. The analysis primarily consists of tabulating frequencies and percentages of various responses to the questions. The results are then compared and coded in numerical terms and percentages.

Results and Discussion

In this section, the data concerning each question are reported followed by some interpretation and discussion.

1. What Characteristics Do You See In Yourself That Contribute To Your Creativity?

Results. Traits characteristic of the subjects used in the analysis of this question are derived by 1) the interviewer directly asking the subject the characteristics he sees in himself, 2) the interviewer listing the creative characteristics noticed in the summary of the interview, 3) a combination of 1 and 2. As a result of the combination of the two ways to elicit characteristics, all fifty subjects are represented in the analysis of this question.

Numerous characteristics are enumerated for some subjects while few are listed for others. The highest number of traits listed for any one person is 29. Four traits is the lowest number given and is listed for three subjects. The average number of traits enumerated is 8.8.

Some combining of enumerated traits is necessary. For example, terms that are somewhat the same such as autonomous and independent are placed together. Seventy-five separate traits are identified. Many are only mentioned once and refer to only one subject.

Table 1 lists in order of occurrence the traits most commonly suggested and the number of subjects credited with possessing that

trait. Only those traits suggested for eight or more subjects are listed.

Insert Table 1 about here

Discussion. All of the traits referred to by the subjects in characterizing themselves agree with traits listed in the various studies cited in the literature. The data confirm that subjects enjoy the same kinds of personality characteristics that known creative figures possess. Based on this data, it appears that all creative people enjoy personality characteristics in common.

2. What Have You Accomplished That You Consider Creative?

Results. Sixty-six percent (33) of the subjects give information regarding what they have accomplished that they consider creative. A number of them answer this question directly while some of them refer to their accomplishments in other questions they answer. The highest number of accomplishments listed by any one subject is seven. Seven subjects list one or more publications among their accomplishments. Four of these list multiple publications in scientific research, literature, illustrating, and music. One subject refers to numerous articles and publications. Other subjects refer to products they have completed such as artistic work, writing, poetry, illustrating and designing, but do not specify if their work has been published.

Nineteen subjects include creative accomplishments that are

work-related. Several areas are listed such as the building of a business, teaching, homemaking, designing, publishing, etc.

Achievements related to the arts are listed by fourteen subjects. These areas include artistic work, musical achievements, writing poetry, and participating in drama. Eight subjects list building, woodworking, and mechanical activities. Four subjects include some form of designing. Four subjects mention achievements in which they acted in a leadership capacity. Other achievements mentioned include cooking (3), interior decorating (2), amateur counseling (influencing others) (2), child caring (1), school projects (1), gardening (1), and achieving an education (1).

Four comments were given that are not focused on particular areas, e.g.,

> "Everything I do in my classroom is creative. I do everything different from anyone else in the school."
>
> "I use my mind and language to shock people. I enjoy saying what's on my mind and seeing their reactions."
>
> "Certain decisions in my life have been very creative."
>
> "I think I am able to extend my creativity beyond my profession into many areas, such as financing, mechanics, relations with people, etc."

Discussion. There are some problems in analyzing this question. First, it is difficult for some of the subjects to answer; one reply illustrates this:

> "That's tough! I've never given that much thought."

Second, the subjects do not necessarily tell all; and, as

this focus is hidden among a number of other items, the interviewer did not necessarily persist in searching for replies. Even if this had been done, a complete list of accomplishments would still be difficult to acquire. Some subjects answer the question with all declarative statements while others list accomplishments.

Most subjects responding to this question recognize their creative accomplishments without difficulty. Many list several, and often they are in areas that appear to be incompatible, e.g., mechanical achievements and cooking, etc. The greatest number (19) of subjects list work-related accomplishments. Two subjects are recognized for their achievements, one rather widely. While seven subjects list published works, most present accomplishments that are of the general, everyday kind that "keep the homefires burning", "the first-rate soup cooking", and "society progressing". This is illustrated by one subject as follows:

> "Most of the creative things I have mentioned are intangible. You can't see them or measure them. But, they are part of my 'human experience' and they are creative."

The creative accomplishments the subjects credit to themselves move away from the characteristic accomplishments that might be considered by most people as being creative; that is, confirming achievements to certain conventional areas, such as those of theorists, artists, scientists, inventors, writers, etc.

The accomplishments given are characteristic of the "more widespread kind of creativeness which is the universal heritage of every human being that is born" that Maslow refers to in

self-actualizing creative people.

3. What Are Your Interests And/Or Hobbies?

Results. Ninety-four percent (47) of the subjects responded to this question. The nature of the data makes it difficult to report statistically. The least number of interests listed is two, but one of the two includes all types of sports. The greatest number of interests given by any one subject is 32. However, three other subjects give a rather extensive list of items enumerating 14, 19, and 20. Twelve subjects list items and elaborate with comments such as:

> "The list is endless."
>
> "I have quite a few interests."
>
> "There is never time to participate in all the interests and hobbies I care about."
>
> "I have a number of ways I can relax through my hobbies and interests."
>
> "I am always willing to get myself involved in a new activity."
>
> "I enjoy a number of little things, but I don't have one definite hobby that I follow through on all the time . . ." (subject continues to list 14 different interests or hobbies)

Only one person states that her hobbies or interests are limited. This subject is 84 years old and says, "Reading, painting, people . . . but, I would say my interests and hobbies are limited due to my age." Several of the interviewers also conclude that their subject has a variety of interests and is talented in a number of areas. However, in some instances, the response to the question in the body of the interview doesn't

confirm this conclusion. The interviewer may know the subject fairly well and therefore provides this information or the interviewer may glean more from the total interview than the response to the question indicates.

Excluding the 12 subjects who describe their interests as "endless" or "I have quite a few interests", the median number of interests listed is seven.

Discussion. The analysis may not reflect in actuality the various interests of any one subject. It appears that unless the interviewer made some attempt to probe the interviewee further when he suggests only a few interests, some important interests would not be listed. It also appears that there would be a difference between the number of interests and variety of interests. There is no attempt to use the data to determine variety of interests even though some lists certainly suggest variety. Also, there is no attempt to correlate interests and hobbies with achievements or to establish which interests and hobbies are attacked with an area of depth that would make them significant. To quote Stamstad, "The fact that he has a hobby is not the important item; it is what he has done with it. Has he contributed any original work or is he satisfied with repetition of what others have done?"

Although there is no attempt to statistically represent the data, it appears to the author, after analyzing the interviews a number of times, that several of the subjects have taken their hobbies or interests into a realm of originality or have at least

used them to make rather significant contributions. For example, one subject has taken his hobby in cooking and turned it into a rather successful business. He sells candy to local department stores and his business has been written up in a local metropolitan magazine. He holds a Ph.D. in music and discontinued his college teaching career to operate his business. In the meantime, he composes and has had several compositions published, sketches, does a good deal of work on his house which was built in 1800, and runs his business. This appears to be a case where one of his interests became his livelihood and his livelihood became one of his interests.

4. Do You See Yourself As A Creative Individual?

Results. This question was asked directly or indirectly of 78 percent (39) of those interviewed. Of the number responding, 84 percent (32) indicate that they feel they are creative or highly creative. Three subjects feel they have "some" creative ability. One is not sure, and three subjects feel they are not creative.

Of the three subjects who feel they are not creative, one lacks an understanding of creativity. While he does not see himself as creative, he describes his creative ability precisely. "No! Creativity is artistic--inventive. I'm analytical and persistent. I like thinking of different solutions and ways to do things."

Another subject states that she doesn't believe in "tooting her own horn". While she is pleased with her accomplishments,

she will not admit that she is creative and skirts the issue. The interviewer concludes, "Inwardly she knows she is creative. She struggles when discussing it because she has been taught humility. She would not let her guard down to discuss it although she has demonstrated her creative ability in the things she has done."

The third subject responding negatively states that she associates creativity with music; and, as she is not musical, she does not see herself as creative.

Several subjects are most emphatic regarding their creative ability. Below are quotations from a number of subjects in response to the question.

> "Me? I'm the most creative person I know. Everything I do is creative. It's unbelievable how creative I am. I do something every day I consider creative." -- self-employed businessperson --
>
> "It seems that all that interests me is the challenge to create." -- musician --
>
> "I create with my mind. I produce ideas rather than words and then develop them with my hands." -- self-employed businessperson --
>
> "I view anything and everything as possible." -- teacher, preschool --
>
> "Life would be very dull if I couldn't do things I think are creative. That's what keeps me going." -- high school music teacher --
>
> "I'm never satisfied unless I'm creating." -- elementary teacher --
>
> "Most of the time I find that I am able to come up with an object I need by rearranging something I already have. I am also able to come up with an explanation or description of a situation which may appear unrelated to the situation but is not. I think my visual sense (being able to visualize

things in my mind) is a major key to whatever amount of creativity I possess." -- artist --

"I am able to convert things that may not be useful to others into a practical and aesthetic product. I have an ability to get abstract components, visualize them in combinations, determine how they interface or affect each other, and visualize the conclusions and end products that result from these insights. I think I am able to extend my creativity beyond my profession--such as in financing, mechanical ability, and relationships with people. -- industrial designer --

"Yes, intiutively I can sense that I am a creative person. In my approaches to problem solving, in my perceptions of interpersonal relationships, in my personal life-style, in my anxiousness, in my questioning, in my wondering . . . " -- elementary teacher --

Discussion. The results of the analysis of this question confirm the findings of Taylor (1963, pp. 11-13) that the creative individual sees himself as creative. The findings indicate that approximately 90 percent of the 39 subjects who were asked the question whether or not they see themselves as creative individuals responded affirmatively. It is remarkable that so many of the subjects are able to confirm their creative abilities.

5. Who Do You See As A Creative Person?

Results. Sixty-six percent (33) of the subjects responded to this question. Twenty-one subjects either suggest examples from the general population such as relatives, friends, teachers, acquaintances, or elaborate as to the assumption that "everyone possesses creative ability." Eleven subjects make comments such as:

"People are born creative."

"Creativity is innate in all people."

"Everyone is creative to some degree, or at least has potential to be creative."

"Everyone is creative but they have to recognize it in themselves."

"Everyone possesses creative ability. It is a normal, natural part of an individual's makeup."

Fifteen subjects give examples of people whose contribution is extraordinary and who are considered successful and well known. Four of these also suggest people in the general population or elaborate as to the "innate" nature of creativity in all people. One subject has a difficult time answering the question and does not offer information that could be categorized.

Discussion. This question is asked as a way of determining whether the subjects view creativity as an ability common to the general population or an ability possessed by a few outstanding human beings. It is assumed that if the subject suggests "Aunt Marge" or "Cousin Eugene" as a person he considers creative, rather than Frederic Chopin or Michaelangelo, etc., he has a fairly good perception of creativity as a general ability. It is not assumed that those suggesting creative people of the "genius" variety don't allow for creativity in the general population.

The way in which the question is asked is open enough to produce responses that suggest people who are both "generally acknowledged" for their creative contributions and those excelling for their creative endeavors, among those of us in the general population.

6. What Is Your Definition of Creativity?

Results. Eighty percent of the subjects (40) define creativity. When asked to define creativity, some subjects indicate that they don't have a definition but then proceed to offer one anyway. For example, one subject responds as follows:

> "I cannot say I have a definition of creativity as such. I think creativity is a very abstract term, and that there is no right or wrong answer to your question. When I think of creativity, I immediately think of a so-called 'creative' person. For instance, upon hearing your question, I thought of Michaelangelo or Beethoven; someone who is known for his products. I guess you could say that creativity is a way to solve a problem or to get the kinks out of the process in which you are involved to come up with the most functional product. When I say functional, to an outsider, the product may seem very abstract and inappropriate."

Some answers to this question are involved and lengthy as can be seen from the above response. Others are one-word oriented; for example, one subject answers the question with the word, "imagination!" The subject goes on to explain but the explanation adds nothing to the original response. The author, therefore, categorizes the responses according to the currently specified ways of defining creativity with the addition of two other categories which seem appropriate to the responses of the subjects used for this study. Many of the subjects define creativity in a way that includes references to more than one of the categories. The author, therefore, includes these responses in more than one category, where appropriate. Table 2 illustrates the categories used and the total number of subjects making a reference in each category. The numbers in parentheses indicate

the number of responses included in another category and the category to which the reference is made.

Insert Table 2 about here

Three subjects define creativity as an imagination-oriented activity. All three appear to view imagination as synonymous with creativity. One subject extends his definition so that it is categorized in two other categories.

Five subjects define creativity as a mind-oriented activity. Such responses include "letting the mind go", "generating unique solutions or ideas", "original thought", "to think with an open mind", etc. All of the responses in this category are also categorized in one or more of the other categories.

Six of those responding to this question define creativity in terms of a kind of person. In other words, the definition is described by highlighting the involvement and/or characteristics of a person creating. For example, one subject explains his definition as follows:

> "I think creativity is variations on known themes. Something which is so far removed, which is so unrelated to anything else at all that it's impossible for other people to perceive what's creative about it. To understand something, you have to relate it to other things; so, for instance, abstract painting isn't nearly so communicative to someone who has never seen [an abstract] painting before as to someone who knows the history of painting and the various schools in which the artist grew up and around and then made variations on that, and that he, the artist, comes out of that environment. The same with literature and music. It's not just something totally different that has no relationship, people can't relate to it, but if they have a background

> and this creative person comes in and they add a new addition to it. It's a variation on a known theme. That, to me, is creativity, recognizable creativity, communicatable creativity."

Three of the responses in this area are also categorized in one or more of the other categories. Seven persons define creativity in terms of a product. These responses focus on the "capacity to produce something", "someone known for what they produce", or "mind always oriented toward new products". Five of the responses in this area are also categorized in another category.

Fourteen subjects characterize creativity as an originality-oriented definition. Responses focusing on originality are placed in this category as well as responses using words or phrases that convey the same meaning as the word originality, such as "uniqueness", "doing things differently", "cleverness", and/or "something new that has never been done before", etc. Ten responses are placed in other categories.

Fifty percent (20) of the subjects responding to this question view creativity as a process. Some subjects respond by using words or phrases that are process-oriented, for example, "transfer", "combine", "make associations", and "able to generate". One subject defines creativity as

> "A diverse activity . . . looking at something very differently . . . not a commonplace situation. For example, combining two ordinary things and developing something new. One can do this with situations also. . . . creativity begins to show as a way of life--unconsciously. One can use creativity as a springboard. I indulge in its diversity . . . wallow in it . . . revel in it."

Other subjects describe a process in their definition. Examples of such responses are as follows:

> "Creativity is an ability of the mind which provides a person with the possibility of doing things differently, with cleverness; it involves an openness to possibilities; selecting a solution; and 'sticking your neck out' in follow through."

> "Maybe it's not really complicated. For example, let's say we're in primitive times. You want to get an apple off a seven-foot tree. To the right is a five-foot rock. I think creativity comes in when you say, 'Let's put the rock on those four logs, roll the logs over and under the tree, set the long log against the rock on the ground, and walk up the log onto the rock and get the apple.' Right there, that's creativity. You put one and one together to get to your goal.
>
> In music, your goal is to come up with something that is pleasing in sound. So you put things together to get there. The ability to put one and one together to reach your goal would be creativity."

> "Making the best use of what you have available. Seeing all options available and making use of them is the best way. Creativity pertains to anything--not just what you make. Thinking can be creative."

Five subjects refer directly to the word, "process", or "problem solving", in their definition of creativity. Three responses are quoted below.

> "It is a process, a process of transformation--not necessarily a predictable one--of taking all the bits and pieces and putting them together in something new. Partly it's a question of surrendering to this process, once it begins, being faithful to it, being able to see it through."

> "I believe that creativity is a system of deductive reasoning or process. It is a total emotional expression that takes everything in me to be successful. Creativity is a unique way to look at things in our environment and to create those things in the mind."

> "Creativity is the ability to think beyond the ordinary. The ability to take whatever experience one has, in any area, and

apply it to the particular problem you may have at the time. The ability to look at something and relate it to other things or problems, to expand what one sees into other areas."

Discussion. The fact that so many subjects (50 percent) characterize creativity as a process is significant for two reasons. First, responses indicate that a number of subjects used for this analysis possess a rather current view of creativity. Second, one might assume that since the subjects are members of the general population without specific training or study in the area of creativity that their views have come from their own experience. In other words, their experiences in creating have led them to view the procedure as a process.

7. Do You Have A Process You Use (Go Through) When You Create?

Results. Eighty-four percent (42) of the subjects respond affirmatively to the question, "Do you have a process you use when you create?" The question isn't always phrased exactly as worded above. It often follows the subject's response to another question and is asked to fit more conveniently into the total interview. Nevertheless, the idea of discovering the way in which the subject tackles a creative endeavor or a problem is always evident.

Sixty-four percent of those responding to this question articulate a process. Some describe the process very poorly. Some describe the process but are not sure of all the steps. Others indicate that they aren't conscious of a process but go on to describe one anyway. Some interviewers indicate that,

while some subjects have never been asked this question or thought about it, they nevertheless recognize the approach they use when faced with a problem or when involved in the act of creating as a process-oriented activity. Six subjects give a definite affirmative answer to this question and in each case go on to give a very good description of the process they use. Fifteen subjects give very clear descriptions of the process they use. Some elaborate rather extensively and some are eloquent in the response given to the question. Examples of ten responses are found in Appendix A.

Numerous ideas relating to the process are suggested by the various subjects in their individual responses to the question. However, the interview focuses on many questions and in most cases there is little if any follow-through or counter questions related to the process description. Nevertheless, some characteristics related to the process are suggested by more than one subject. Some of them are included below.

Fourteen subjects make reference to ideation or fluency of ideas when working through the process. An example of one response includes,

> "The more ideas you can throw around can lead you to making connections; the more ideas, the more likely you are to come up with an ideal product."

Eleven subjects mention some aspect of investigation or research when working through the process. One example is as follows:

"I try very hard to ingest a lot of different information

> before I make any decisions. I like to talk to several people and hear what they have to say about the problem. I usually do some reading in connection with it."

Nine subjects mention the aspect of persistency or disciplining oneself until the process is completed. One subject says,

> "I like to work to the exclusion of everything else. I can exclude everything except people. Once my creative juices are flowing, I don't dare stop. I get in a jet stream of things, going well, and I'm afraid to stop--I might lose it. If I'm working on a problem, time doesn't matter. I'll stay up all night, if I feel I'm still being productive."

Nine subjects refer to the kind of environment most conducive to their working through the process. One subject explains,

> "Because the idea of initial design is the most difficult part of my work, I need complete silence during this time to be the most successful. Once the hardest part is over, I definitely need some sort of background noise--but not people. I enjoy working in my bedroom more than any other place in the house. It is important to have a lot of open space . . . I work best in the early morning or late at night . . . I work much better on cloudy and rainy days as opposed to warm, sunny days. Somehow I seem to be more creative during the fall months . . . "

Five subjects mention how much they enjoy working through the process. Five subjects make reference to their "sensitivity" to the circumstances related to the problem at hand. Reference is made by five subjects to letting the problem "perculate" or "incubate" awhile; and five subjects refer to the action of "re-thinking" or "staying open for revisions" when concluding the process.

Discussion. Responses to the question are so varied that it makes it difficult to categorize or to find any common agreement other than the fact that a large number of subjects agree that they

use a process in working through their creative endeavors.

The author attempted to analyze the responses to this question in terms of the various suggested processes discussed in the literature. The task became impossible from the information available. However, the process, as suggested by Miel, appeared to fit more conveniently than any other process reviewed. Possibly, this process is more open than some of the others suggested and includes less formal steps, thus allowing for more leeway.

It appears that the data support the research in that the creative process has been described in a variety of ways (Stein). The data also suggest the possibility that the process isn't the same for every individual, and that the individual may tailor his approach to creating to his own unique personality and/or the particular creative endeavor in which he is involved.

While the difficulties in reviewing the responses to this question are obvious, it is nevertheless noteworthy that so many subjects verify the fact that they use a process and that they are able to articulate the process by listing the various steps they use in pursuing their creative endeavors.

Six subjects responding to this question suggest a negative factor which produces positive results and acts as an encouraging influence. Specific factors are:

> "Coming up with solutions to my parents' economic problems when I was a teenager." -- male, industrial designer --
>
> "In childhood, I think the upbringing in a very structured, religious environment was initially quite stifling because the world was defined and the world was known. The only

things that weren't known were facts, and I came out of it for awhile believing that questioning was wrong and acceptance was perfection. But, breaking out of that mold, the fact that the mold was impressed so strongly and then being liberated from it, all the more enhanced my respect for listening; and ultimately, I think I made good use of it. I got a benefit out of what initially was a repression." -- male, office manager and Ph.D. candidate in psychology --

". . . another incident which is highly responsible for my creativity was an experience that I had in high school. One of my counselors said to me, 'You are too closed minded.' I thought about this and realized I wasn't radical enough. I think at that point in my life I needed that kind of feedback in order to improve myself." -- male, mechanical engineer --

"The neighborhood I grew up in was a tough area and no one was as sensitive as I was. I would think up games and things to do to stay out of trouble and have fun." -- male, artist --

"My father's death put a lot of responsibility on me in so many ways. It helped me to know that I could do things." -- male, artist --

"Fighting back the rigidity. The answer I hate to hear at work is, 'That's the way we did it before'. Sometimes you don't want to reinvent the wheel, but sometimes you have ideas to improve the situation." -- male, industrial arts --

8. Who Helped (Encouraged) You To Pursue Your Creative Endeavors? (What Factors Influenced Your Creative Pursuits?)

Results. Fifty-four percent (27) of the subjects responded to this question. Credit is most often given to family members. Twelve subjects list either both parents or one parent as being instrumental in encouraging them. The mother is mentioned most often. Ten subjects list other people including friends and colleagues.

The effect of teachers, or the educational system in general, is referred to by thirteen subjects. Most generally, reference is made to a specific teacher. The best example is as follows:

"Yes, my third and fourth grade teacher. She was very

tolerant and very compassionate. There was no particular event that made me think she was creative; it was more of an attitude. She's the only teacher I've ever written a letter to--she said she has a scrapbook full of them."

Eight subjects refer to their own ability as an influential factor. Such responses include the following.

"I built up confidence in being myself--being creative." -- female, homemaker --

". . . then I made a movie, and I realized, 'Gee! I can create.' I realized some of my own creative ability. It has worked for me since." -- female, school owner --

"I discovered that I was different from other people very early in life. . . . I know very clearly who I am and what I want." -- male, educator --

"My belief in myself. I have never doubted myself. Other people may have had doubts, but I did not." -- male, speech pathologist --

"One of the most important factors is that my mind insists on being interested in something. I cannot sit idle and be happy." -- male, mechanical engineer --

Three subjects list their spouse as exerting an encouraging influence on their creative ability. Other credits given are only mentioned by one or two people, e.g., "fighting back rigidity", breaking out of religion", "living in a number of different areas", "books", "being a parent", "ideas", and "the neighborhood in which I lived".

Discussion. Data support the importance of encouragement in influencing creative pursuits. It also supports the notion as espoused by Osborne (1963) that "intimates can encourage best". Subjects, for the most part, appear to be aware of the influence and input of a mentor in their lives.

A significant idea is that encouragement can come from the

person himself. Subjects stating this referred to "building up confidence", "belief in their own ability", etc. These comments indicate that they gained this kind of confidence in themselves and see their own personalities as the dominant factors in their ability to create. It may be that when pressed further these subjects could isolate another person who had aided in helping them gain such a remarkable view of their own ability.

9. What Conditions Have Blocked, Stifled, Or Inhibited Your Creative Ability?

Results. Seventy-eight percent (39 persons) of those interviewed responded to this question. Three subjects indicate that their creative ability has been blocked only rarely, if at all. One subject elaborates:

> "My creativity has never been stifled. I've been stubbornly resistant in terms of the whole educational system. I just don't 'discipline' very easily, if at all . . . I find it very difficult for me to become disciplined in the educational system, to sit back and permit myself to abide by all the things necessary to abide by in order to get through the system. I'm not that kind of personality, the system is going to have to bend to me. In terms of my own creativity--given the right situation, one in which I am totally independent, I think I can be very creative. By independent, I mean where I am functioning totally on my own, in my own business, in my own professional practice."

Some subjects list only one item that blocks, stifles, or inhibits their creative ability while others list several. The average number listed is three. Some subjects discuss these blocks at great lengths while others only list the interference, not offering to make an explanation.

There are numerous blocks listed by the 39 subjects. Finding

an appropriate way to categorize them presents problems. Almshah's (1972) article referred to previously seems to be more appropriate than other material reviewed for categorization of the responses in this question, but the categories suggested appeared to be too narrow. Alamshah recognizes this when he states: "We may well begin an inventory by pointing out that certain blockages to creativity appear to be fairly common. Some of these can be identified as socioeconomic, psychological, or characterological." Nevertheless, their categorization is extremely useful, and is used as a basis for extending categories.

The Celebration of Creativity Catalogue (Frost, 1977, pp. 67-68) lists five conditions for creativity, i.e., intellectual, physical, social-emotional, psychological, and creative readiness. The examples of procedures listed under each condition in the "catalogue" are related to encouraging creative ability in children in the school setting rather than the adult setting of work and play. One might assume, however, that if these five conditions are necessary for creativity to flourish, their absence would constitute a real problem and hamper creative people from achieving their goals regardless of the setting. Considering this assumption to be true, these five areas appear to fit the categorization purposes of this study more appropriately than any other list surveyed.

Intellectual blocks are those where opportunities and resources for the learning of knowledge and/or skills are lacking. Physical blocks relate to the arrangement of space, availability of materials,

and the organization of the situation. Social-emotional blocks are those where the contributions of the individual are not rewarded or recognized when questioning and exploration are limited, and where there is undue pressure for conformity. Psychological blocks relate to the physical and mental hygiene of the situation where there is a threat to self, inability to risk, or keep in touch with one's feelings. Creative readiness blocks are those that relate to the individual's inability to concentrate, to be puzzled, and/or to solve problems.

Graduate students were asked to help in the categorization process. Students were given a duplicated form listing the five categories. Students were then given a list of the 52 blocks mentioned. The blocks were numbered. Students were then grouped in teams of two or three and requested to place each numbered item with the appropriate category. Seven such groups participated in the categorization. The author then accepted each block into a category if there was agreement by three or more groups. It is possible that a block could fit into more than one category. For example, "Playing it safe" may connote a social-emotional or a psychological block. However, students were to list the block in the category they felt appeared to be the most appropriate.

Table 3 lists each block referred to by the 39 subjects. The blocks in each category are rank ordered according to the number of subjects who mentioned that particular block.

Insert Table 3 about here

Three blocks are categorized as intellectual. Eight subjects indicate that school blocked their creativity. Specific problems related to school were boredom of the school experience, lack of being challenged, not being free to think differently, emphasis on only one right answer, the need to satisfy institutional requirements rather than focusing on one's ability, and teachers who limited too severely what one could do. Two subjects elaborated:

> "My teachers in school thought that I was so strange that they sent me to a psychiatrist because they thought I had a real mental problem. The psychiatrist thought I was on drugs because I would always come up with these off-the-wall ideas. They gave me an I.Q. test and concluded that my mind was not being fed enough and I was becoming bored. I carried through with these crazy schemes which made me disruptive in school. The teachers had a hard time with me. They didn't know how to control me."

> "Yes, I do feel that my creativity was hindered in several ways. First of all, I remember my seventh grade teacher as being very strict. I feel that there is a need for discipline but in order to create, there has to be less discipline or discipline of a different kind. Also, at this point in my life, I was realizing that I was an individual and when I slipped out of the "norm" I was ridiculed and embarassed in front of the entire class. I felt this teacher was highly insensitive to his students."

Other blocks specified are lack of exposure to varied experiences as a child and not finishing school.

Fourteen blocks are categorized as physical. Five subjects list time as a block to their creativity. These responses include the lack of time to do the things the individual wants to do. Four subjects list lack of money as a block. The specific problems related to work mentioned by the four subjects include the meeting of everyday necessities with nothing left for anything else, lack

of support for the job being done, and the waning of energy and enthusiasm. Illness is mentioned by three subjects. In all three instances, the illnesses were serious. Fatigue is mentioned by two subjects. Table 3 lists additional physical blocks, each of which was specified by a different subject.

There are 23 blocks characterized as social-emotional. There is no one large general block mentioned. It would appear possible to combine some of the responses in this area but to do so would not convey the meaning the subject intended to convey. For example, those blocks related to the family such as parents, family, and spouse, would seem to be a logical combination. However, to combine these would suggest that the subjects have somewhat the same complaint, whereas they are different. For example, two subjects refer to the full-time responsibility in meeting the needs of their families. So much energy is used in parenting that there is little energy left to pursue other interests. Two subjects list a specific parent as stifling creativity but offer no explanation, while one subject elaborates on the strong emphasis her parents placed on the "need to conform and to be unduly concerned about what others think". Three subjects indicate that their spouse or former spouse inhibits them. All three elaborate and respond to the question as follows:

> "Yes! My former husband--he wanted me to be a secretary. (Subject owns her own pottery shop.) He discouraged me by showing not only a complete lack of interest, but a total lack of respect for my work. He placed NO VALUE on what I did.It was a bad emotional climate."

"This is a terrible thing to say, but I guess I have to be truthful. Yes, by my husband. It is the only place I feel blocked. But I have to respect his personality and change when I am with him. I would not be able to live with him if I did not. I admire and respect him. He gives me security. Could you imagine if there were two of us like him. It would be bedlam! We would never know what direction to go in. My outlet is my work. (Subject is a teacher.) If I did not have this outlet, I do not know what I would do."

"The biggest block was a bad marriage--the wrong partner. He stifled me and I resolved never to do it to another person. A person supressing another human being is very wrong."

Four subjects indicate that social standards block their creativity. Concerns generally include the overall "conformity--conservative attitude" in society, and the "overemphasis on rules and regulations that prevent the use of certain methods of problem solving". Other social-emotional blocks specified by three or fewer subjects are listed in Table 3.

Eight concerns are characterized as psychological blocks. Two subjects list self-criticism as a block. One person elaborates that his creativity is inhibited most by being too "hard" on himself. He continues that he doesn't like to "make mistakes". He explains that this block doesn't allow him to venture out and be more creative. Table 3 reflects additional blocks, each of which was listed by a different subject.

Three subjects mention blocks associated with creative readiness. Table 3 describes the specific concerns in this area.

Discussion. The data present a number of blocks. There are more blocks listed in the social-emotional area than any other. However, there is no one block agreed upon as being the most personally damaging. The most that can be summarized is that the

subjects list more blocks in the social-emotional area than are listed in three of the other areas combined. The social-emotional area is also the area involving the blocks that can be attributed to relationships with people, such as spouse, parents, colleagues, peers, family, friends, etc. Some of the blocks listed in other areas, e.g., psychological blocks, may also be people-oriented such as messages about inadequacy, external pressures, etc. The data lend support to the writings of Osborn (1963, p. 52) that "the discouragement that hurts creativity the most is that which comes from those we love".

10. Can Creativity Be Developed Or Enhanced? How Can Creativity Be Encouraged Or Developed In Others?

Results. Fifty-four percent (27) of the subjects responded to the question regarding the development and enhancement of creativity. Some subjects are asked directly whether they feel creativity could be encouraged or developed. Subjects generally responded and continued to elaborate. All but one subject responding to this question feels that creative ability can be enhanced. Some are emphatic in their answers. Two such replies are quoted:

> "I absolutely believe that creativity can be developed and it is the responsibility of parents and caretakers to develop it."
>
> "Taught? I wonder. Developed? Yes!"

Further analysis of the replies to this question reveal some agreement as to how creativity can be enhanced. Nine subjects

refer to the value of problem-solving experiences with such comments as, "help children think for themselves"; "give people necessary facts to solve problems, allow them to make their own connections to produce an answer"; and "no doubt children are capable of and should be able to solve their own problems . . . " Seven subjects refer to the kind of climate needed to develop creative ability with replies like, "mostly that we don't step on it, squelch it, but provide a climate where it can grow"; "change environment to stimulate it"; "provide a very secure environment by assurring a lot of success experiences".

Among the other areas mentioned by five or fewer subjects are references to allowing freedom, being sensitive to the needs of others, encouraging individuality, providing a myriad of materials, etc. Most subjects apply their thoughts to children or students rather than adults. Some of the individual ideas for enhancing creative ability are quoted as follows:

> "establish a self-paced, somewhat independent student-centered approach . . . "
>
> "Students and their guardians should have the option of selecting their own teachers. Learning and teaching styles should be analyzed, diagnosed, and matched accordingly . . . "
>
> "Use a wide variety of teaching methods which encourage divergent thinking."
>
> "Provide travel and books."
>
> "by finding how much direction to give, and when to stop, so students can use their talents and capabilities."
>
> ". . . include myself as an open, responsible, supporting, encouraging force."

"Apply techniques of Synetics, Inc."

"We should try to let everyone 'follow the will-o'-the-wisp.'"

Discussion. Those subjects responding to this question overwhelmingly confirm their belief that creativity can be developed. This is encouraging, considering the fact that there were so many centuries during which the prevailing attitude toward creativity was that it was "not teachable" (Hallman, 1964).

There is also some agreement as to how creativity can be developed. While the sample isn't large, it provides some support for the kind of methods that are used to encourage creative abilities. Certainly, providing problem-solving experiences is vital and should be employed in those programs designed to develop creative ability. The importance of providing a creative "climate" or environment where creative abilities can grow is certainly thought to be vital. Each of the other items mentioned is also significant in enhancing this valuable ability.

General Discussion

The results of the analysis of the ten questions asked of the fifty subjects indicate that graduate students knowledgeable about the characteristics of creative people can identify individuals with creative traits in the general population. Furthermore, they are also able to make some determination as to the extent of creative ability they possess.

The data appear to support the assumption upon which this study is based: that creative ability is abundant among those with whom we associate.

The first five questions analyzed in this study center around the subjects themselves and focus on general creative characteristics, accomplishments, hobbies and interests, if the subjects see themselves as creative, and who they consider to be creative. Subjects generally not only see creative personality traits in themselves but also overwhelmingly see themselves as creative. Not only can they recognize these characteristics in themselves but they also recognize them in others, many of whom are colleagues, friends, and personal acquaintances. Subjects are also able to identify their own creative accomplishments, a number of which are product oriented.

Two questions relate to ways in which the subjects perceive creativity, that is, how is it defined and is it process oriented? Ninety-eight percent (49) of the subjects are represented in answering either one or both of these questions. Of these, 43 refer to creativity as a process in the definition given and/or articulate a process when responding to the question with that focus. This adds even more significance to the discussion presented previously in that the overwhelming majority of the subjects see the process as an intregal part of the creative act.

The fact that subjects refer more often to their products when enumerating accomplishments is not necessarily incompatible with the view the subjects hold of creativity as a process. The importance of productivity in creating is crucial. Anyone may consider himself creative and purport to follow a process but if

there is no closure, if their activities are not developed into a product of some sort, their creativity cannot become manifest.

The last three questions deal with inhibiting, encouraging, and developing creative ability. Subjects enumerate numerous blocks that stifle creative endeavors. No one block seems to be predominate in producing a stifling effect other than the numerous blocks mentioned involving the forces that come from other people, especially intimates. But, regardless of past and present efforts to inhibit creativity whether they be physically oriented, socially/emotionally oriented, etc., the subjects generally see themselves positively and view themselves as creative. They also respond to enumerating specific creative characteristics about themselves and are able to list their creative accomplishments.

While encouragement was offered most by intimates, e.g., family members, friends, colleagues, the same forces were also those that provided the most blocks. The significance of the human relationships is primary in one's quest to develop creative ability.

In all the history of humankind, it has only been during this century, and particularly this latter half, that creative ability was thought to be natural and human and therefore "educable" (Hallman, 1964). The attitude demonstrated in this study that creative ability is "educable" may reflect changing attitudes in the general population. This kind of change must be heartening to early pioneers such as J. P. Guilford who worked so diligently at turning around the neglect toward the subject.

Though the preponderance of responses related to ways to encourage creative ability are directed toward developing creativity in children, the fact that specific ideas are suggested is significant. It is also significant that the methods suggested closely resemble those suggested in the literature and used in programs designed for the purpose of encouraging creative ability. A much larger sample focusing on this final question relating to whether or not creativity is "educable" and how it may be encouraged may add fuel to the educational fires to include the development of creative abilities among those responsibilities assigned to schooling.

A number of concepts relating to creativity were given voluntarily as subjects responded to the interviewers. The author was constantly amazed at the remarks various subjects made. They illustrate a rather unexpected understanding regarding their own creative abilities and creativity in general. There is no way to categorize or capsulize everything that was said, but so many of these comments are important in helping us to understand the creative abilities of those with whom we associate that several of the most striking are presented in Appendix B. This is by no means a comprehensive listing of all the comments made, but rather a descriptive way of giving the reader additional insight into the creative ability of the subjects used for this study.

Interviewers were often especially keen in summarizing their work. Additional insights relating to the subjects can be gleaned from the fifty summaries. As this is impossible, ten such

summaries are included in Appendix C to give the reader insight into the kind of thorough analysis the interviewers made of their subjects.

Previous comments were made regarding shortcomings of the study in the discussion of some of the questions. The following difficulties are more general and need to be cited:

1. Interviewers were not trained in interview techniques. While some discussion along this line was conducted and some individual interviewers may have had previous training and/or experience, there was no conserted effort to develop techniques. This may have affected the kind of follow-through that was made regarding some questions.
2. Interviewers constructed their interviews specifically for the individual they had selected. While they formed questions before beginning the interview, the direction the interview took often changed the order of the questions or the addition or elimination of questions. It was the view of the author that this allowed for the individuality of both the interviewer and the interviewee. However, the data may have been more meaningful had each of the fifty subjects answered all ten of the questions. In one situation especially, the interview took on a much different direction than most. The interviewer summarizes, "We had no time to explore questions beyond the scientific realm". This was unfortunate because the interviewee had so much to offer in response to

the questions and yet his comments were not available for many of them.

3. One is often more able to gain insight into a subject's creative ability by reading the entire interview rather than combining responses with others. Additionally, as the entire interview is read, the subject begins to emerge as a personality and as one response follows another it is easier to picture the creative ability of the individual involved. It may be possible to convey the totality of the various responses of each individual if the results were compared with each other and more sophisticated measures of analysis were used.

Further research possibilities along this line may be valuable in understanding human creative abilities. More consistent questioning of a greater number of subjects would add a larger data base. A more in-depth analysis of particular questions such as the comparison of the processes suggested by the subjects with each other and with those identified in the literature may aid in viewing creativity more closely. Comparing an individual's response to one question with the same subject's response to other questions may give a more complete picture of the creative individual than is presented in this study. One might also compare the data of those identified as average or above average in their creative ability with those characterized as having lesser creative ability. The same interview technique might also prove interesting if subjects were rather randomly identified and interviewed rather than characterized as creative beforehand.

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TABLE 1

CHARACTERISTICS ATTRIBUTED TO SUBJECTS

TRAIT	NUMBER OF SUBJECTS LISTED POSSESSING TRAIT
Independent (includes autonomous, self-sufficient, independence of judgment)	34
Sensitive (includes aware, responsive to environment)	24
Curious (includes inquisitive, speculative, questioning)	20
Problem Solver (includes likes to solve problems, likes the challenge of problems)	20
Open (includes open to environment, open-minded, willing to listen)	19
High Energy Level (includes drive, natural drive, industrious, hard worker, requires little sleep)	18
Flexible (includes ability to combine, ability to adjust, mentally flexible)	18
Original	15
Persistent (includes perseverance, determined)	15
Risk Taker	12
Imaginative	11
Fluent (includes likes to come up with ideas, has lots of ideas, challenged by ideas)	10
Sense of Humor (includes exhibits sense of humor, is humorous, likes a good joke)	10
Intellectually Persistent (includes desire to learn, knowledgeable, likes to think)	10
Confident (includes self-confident, in control of environment, possesses good self image)	8
Enthusiastic	8

TABLE 2

DEFINITIONS OF CREATIVITY

Definition	Number Responding	Number Listed In Other Areas
Process	20	3) originality
		1) imagination
		1) mind-oriented activity
		1) kind of person
		1) product
Originality	14	3) mind-oriented activity
		3) process
		2) product
		1) kind of person
Product	7	2) originality
		1) imagination
		1) mind-oriented activity
		1) process
Kind of Person	6	1) imagination
		1) originality
		1) process
Mind-oriented Activity	5	3) originality
		1) product
		1) process
Imagination	3	1) kind of person
		1) product
		1) process

TABLE 3 - BLOCKS TO CREATIVITY

INTELLECTUAL	NO.	PHYSICAL	NO.	SOCIAL-EMOTIONAL	NO.	PSYCHOLOGICAL	NO.	CREATIVE READINESS	NO.
School	8	Time	5	Social Standards	4	Closed Mind	1	Too Many Ideas--Can't Choose	1
Lack of Exposure to Varied Experiences When Young	1	Economics (Money, Lack of)	4	Bad Marriage/ Spouse	3	External Pressure	1	Not Finding a Solution to the Problem	1
Not Finishing School	1	Work	4	Conformity (Society)	3	Messages about Inadequacy (Inabilities)	1	Overemphasis on Right or Wrong Answer	1
		Illness	3	Parents/Colleagues	2	Playing it Safe	1		
		Fatigue	2	Criticism	2	Rejection	1		
		Caffeine	1	Conservative Attitude	2	Self-Criticism	1		
		Deadlines	1	Peers (Pressure)	2				
		Living in the Country	1	People	2				
		Paperwork	1	Religion	2				
		Rigid Structure	1	Bland Unemotionalism	2				
		Routine	1	Family Unresponsiveness	2				
		Space (Lack of)	1	Fear of Success	1				
		Transportation	1	Friends	1				
				Judgment of Work on Monetary Basis	1				
				Lack of Support	1				
				Lack of Communicative Atmosph.	1				
				Negative Comments	1				
				Insecure One-to-one Relationship	1				
				Not Listening	1				
				Responsibility (Too Much)	1				
				Ridicule	1				

APPENDIX A

DESCRIPTIONS OF CREATIVE PROCESS

1. "Yes. The process depends on the kind of creativity I am undertaking. The first kind would involve systems or mechanical problems. For this kind, the process would be:

a. awareness - sensitivity to a problem
b. analyzing - breaking down component parts of problems, defining them, and projecting an idea goal
c. incubation - a mental process of developing a solution (this is often on a subconscious level)
d. execution - developing the solution into a concrete entity either with existing components in new combinations or devising some new components with existing elements into a realization of the ideal answer

The second kind of process involves creativity through the senses and would include painting and sculpture. The process would be:

a. medium selection - colors on a palette
b. vague or general concept or direction--realistic, abstract, etc.
c. sensitive response - responding sensitively to each element within the painting since each element affects the whole. You must use intuitiveness to develop the creative product.
d. knowing when to stop--often very difficult"

(male; industrial design)

2. "I have no one approach, it depends on the assignment. Generally, the first thing I would do is get a plan of action, a plan of attacking it. You go through the necessary research to get the data you need, compile it, then pull it together and integrate it. Set a set of priorities. I do it in terms of most important to least important information. You write it and draw conclusions, personalizing it in terms of your experiences. I don't have any one way of handling a particular assignment or problem. Some problems call for direct action."

(male; speech pathologist)

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3. "Yes, definitely. Now you are going to think I need psychotherapy!

a. When I get an idea, I go for a walk...sometimes for two or three walks. I think best when I walk.
b. When I get back, I sit down and write down the purpose of my thoughts. I need to have a purpose.
c. I sleep on the purpose for a couple of days...
d. Then, I go into a room, look into the mirror and talk out loud to myself. I role play. I present the pros and cons of the plan to myself in the form of questions. I then answer myself. In a way, I am anticipating the questions of others...it helps me to clarify things. It's my brainstorming technique.
e. Finally, I get as much information as I possibly can. Since I've made my decision, I want to know as much as possible to help me put my idea together.
f. I then put my idea together. I am very organized. This helps me see my project through to the end."

(male; priest)

4. "Oh, yes, that is one question I can answer with any amount of certainty. Generally, I have a million things I would like to do....I usually can come up with a million different ways I would like to attack a certain problem when I am faced with one. I find that can be just as much of a problem, though, trying to choose one and to follow it through to the end. When I firally get to the stage where I know that this is what I want to do, I can generally sit back then and decide how I am going to go about getting the final product together. I mean the kinds of materials I will need, and the like. Then, I go to it. And, as you know, I cannot seem to stop until it is finished, and it is the way that I like it. My biggest problem is getting to the stage when I know, this is it!"

(male; purchasing agent)

5. "One feels a kind of inner activity, which some people might call a livingness in your will. It animates your relationship, so that you are not just a kind of passive sponge, which picks up what is in the world, but there is something in you, an "I", an "I am", which lights up in you and participates in those activities. Your own inner

self quickens into life when you look at a tree, pick up clay, or do a piece of writing. The inner activity comes into a relationship with whatever it is you are engaged in. Another element is a feeling of trust in this intuitive process and also a trust in your own spontaniety. Creativity has a personal authority and a personal authenticity.

Sometimes I think creativity is a state or a quality of awareness that can exist at any moment, so that you could live very creatively. You don't only have to make something to be creative."

(female; freelance writer, potter, poet, teacher, lecturer)

6. "You never just sit there with your fishing line and hook in the water and hope that something is going to bite. First of all, it isn't just chance. There is the rhythm of the year that you live with. A particular festival comes along and you have a sense what the mood of that time of year is. You have the elements, how the elements express themselves, the cold and the snow and the fact that people are indoors...this is a kind of background, a setting.

That you are an artist who is trying to bring something to a festival means that you have a certain number of experiences behind you, like last year we did this... You are already going in the direction of bringing something about which is related to the past. Your goal is that it is not only satisfying for the present but really brings something that takes you into the future. You have all this as a setting for the thing.

But if you do not say, 'I will do something', then nothing is going to happen. That's the first thing. You have to say, 'Now I am going to be active'. Then you have to look around. You have to listen and find out whether people really want you to be active with the particular thing. Maybe they don't want eurythmy this time. Maybe they want music and you have to get involved in what someone else is doing. That does not mean you are not creative. You have also that possibility to really help someone else in this bringing about of the artistic experience.

The first thing is to get involved, to do something. The second thing is to listen and see how it's going. I'm not sure what the third thing is. I'm not sure I can actually say 1, 2, 3...a, b, c."

(female; teacher of eurythmy)

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7. "I think everyone does. You may not formalize it. I always try to see the problem as clearly as possible. I get as much information about the possible solutions as I can. I always try to put the consequences of my choices on a continuum of the very worst to the very best. I then make my decision. The most important thing about my decisions are determined by what I am looking for."

(female; educator)

8. "I write things down: the pros and the cons; then I set priorities and objectives. This way I can look at it in balance...clarify it--the solution. It is a writing process.

When I start a project I have a lot of energy. As I continue I gain energy...it just generates...it's the excitement...I feed on it...live on it...thrive on it, especially when it is risky. I want to finish, then I am thrilled."

(female; mother and housewife)

9. "Yes: I try to work things out through the scientific method. I make observations, draw hypotheses, collect and verify data, test my hypotheses and draw conclusions. I approach things logically. I become frustrated when things can't be reduced to analysis. So I sometimes must react based on a gut feeling rather than cold logic. I think I can discern the difference between gut feelings and logic. I use this process for most problems and decisions ranging from my job to buying a new car. It isn't always a conscious process, but one that I use very often. And, I feel much more comfortable using the scientific process than the gut feeling reaction."

(male; teacher)

10. "Yes! When I have a problem, I view it as an opportunity. When someone says you can't do that, it's too expensive, my thought might be, how can I make it less expensive? Or, how can I get enough money to do it?...in other words, I start thinking of 'how-to's'...viewing it as an opportunity to explore. An analogy which has helped me is that when a baby is born, that is the beginning of its life. You're not going to say, I don't like the way its ear is shaped--throw it back. You're going to give it all the

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nurturing and care and everything you can to help it grow the way you want it to. Well, if you view an idea that way, that it's a newborn idea, and instead of throwing it out, which is our tendency, oh, that won't work, view it as just the beginning..."

APPENDIX B

EXAMPLES OF SUBJECTS' UNDERSTANDING OF CREATIVITY

APPENDIX B

EXAMPLES OF SUBJECTS'

UNDERSTANDING OF CREATIVITY

1. "I see myself as a creative person. I believe I am flexible and open. I have a wide range of interests. I am a risk-taker; as I displayed when I left my job to finish my master's degree. I have a thirst for knowledge. I have the atittude that anything is possible. My mind is constantly working and I have a vivid imagination. I am curious, motivated, and an optimist. I'm just beginning to realize my own creativity."

(female; graduate assistant)

2. "I think creative people tend to be leaders, so perhaps they are more nonconforming. A less creative person is one who 'follows the crowd'. Yet, to a certain extent, creative people must conform, otherwise there would be many creative people in seclusion or isolation."

(male; sales representative)

3. "I suppose one could say that there are different levels of creativity, different kinds of creativity."

(female; house mother at school for retarded children)

4. "Well, I think everyone has some potential for some creative ability. I don't view creativity as limited to the arts like music, dancing, literature, painting, etc. I think creativity is much broader; for example, I think a good cook shows creativity. I think there is creativity in human relationships. I think it is especially important for teachers and parents to believe that everybody has potential for some creative act. It is often killed in a child."

(male; retired school administrator)

5. "Creativity springs from the background and training that prepares one to think in certain ways. One has the desire, interest, and enthusiasm for an area that spurs production."

(male; research scientist)

6. "Often I feel I am a member of a select few. By this I mean my mind insists on being active, and not many people will extend themselves as I do. I do not feel I need support and reinforcement from others to pursue a project. I like praise and recognition, but I pursue a project because of my own interests."

(male; industrial engineer)

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7. "I would say that my greatest job in 'making things' is in making them for a living situation, where they are needed and when they become part of the ongoing life. I am not an artist who makes things for exhibitions and galleries, and that sort of thing, though indeed I am asked to show my work. I am most inspired by making ice cream dishes for the homes in our little community, or vases for the hall . . . or chalices for the wedding of a friend, or cooking pots for people who order them, or a tea set on themes of the sea which Peter and Tina asked me to do."

"I am also very inspired by the seasons. Last spring at the university, I made a series of 'spring bowls' in homage to the sprouting and growing and expanding forms of the season. I was inspired particularly by the mystery of something new coming out of something old. Last year I made a series of vases in the autumn inspired by the forms of seed pods in my garden and the surrounding fields, and glazed them in saturated iron glazes appropriate to the season."

(female; potter, sculptor)

8. "Generally, I have a million things I would like to do, but with a family and a full time job, there really is not much time to be 'creative'. I usually can come up with a million different ways I would like to attack a certain problem when I am faced with one. I find that can be just as much of a problem, though; trying to choose one and to follow it through to the end. When I finally get to that stage where I know that this is what I want to do, I can generally sit back then and decide how I am going to go about getting the final product together. I mean the kinds of materials I will need, and the like. Then, I go to it. And, as you know, I cannot seem to stop until it is finished, and it is the way that I like it. My biggest problem is getting to the stage where I know, that is it!"

(male; purchasing agent for large company)

9. "When I get an idea, I go for a walk. Sometimes I go for two or three walks. I think best when I walk. When I get back, I sit down and write down the purpose of my thoughts. I need to have a purpose. I sleep on the purpose for a couple of days. You know things sometimes look different after a good night's sleep."

"Then, I go into the bathroom; look into the mirror and talk out loud to myself. I role play. I present the pros and cons of the plan to myself in the form of questions. I then answer myself. In a way, I am anticipating the questions of others. When they ask me these questions, I say, 'I'm glad you asked me that'. I can give them my answer. I need to hear myself talk out loud. It helps me to clarify things. It's my brainstorming technique."

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"Finally, I get as much information as I possibly can. Since I've made my decision, I want to know as much as possible to help me put my idea together. I then put my idea together. I am very organized. This helps me to see my project through to the end."

(male; religious leader)

APPENDIX C

EXAMPLE SUMMARIES BY INTERVIEWEERS

APPENDIX C

EXAMPLE SUMMARIES BY INTERVIEWEERS

I. David displays creativity in many ways. The motivating force to serve others shows sensitivity to the environment and a keen perception of political and social as well as personal and emotional issues. He has the ability to help others become introspective and is open to the feelings and emotions of others, yet falls short in these areas with himself!

Strong feelings of independence with all aspects of his life (personal, social, financial, energy) are very evident in the interview. David is true to himself, yet with what Torrance calls "deeply felt, but more vaguely defined feelings" he still has trouble.

David has a definite inner need for recognition, especially with the involvement in social, energy and religious issues. He leads, is aggressive and possesses initiative in these areas (e.g., he was former Chairman of the County Legal Aid Society and is presently President of our Synagogue). These issues (i.e. equality, Judaism, solar energy and social justice) exhibit common traits of independence and strength.

David is just beginning to be able to recognize in these concerns that he, as an individual, has great independence and strength. He needs to be less critical of himself, to relax and to express what is there!

David feels that he is creative in three main areas; i.e. his poetry, his solar home plans (which combine passive solar and underground techniques) and his legal problem solving. He has

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also written proposed solar legislation and has testified at hearings on such. In this area alone, David has used expressive, technical and inventive creativity. Depending on the outcome of the legislation and of the home (when it is built and functioning) these creations may be considered innovative!

The description of creative teachers offered by Torrance (1963) best fits David. "He works in order to live with himself; the freedom to create is his general reward." The rewards, thus far, have been broad and good. "Occasionally, he may prefer to work alone; he may insist upon setting his own pace. The mind needs an incubation period of seeming inactivity (e.g. the snowy day a few winters ago) to hatch ideas" (e.g. the solar home plans!).

Torrance continues, "Furthermore, since he cares naught for power, he is unlikely to change his thinking in order to carry favor with his superiors." (David has his own business--he is the boss!) "He may be difficult to hold to routine and becomes restless under conventional restraint. He works best when dealing with difficult, challenging problems or when engrossed in a project that is his 'baby'. There will be times when he will defy precedent." David's "baby" is the solar home and he is defying precedent with the combinations of passive solar and underground applications used!

In his work with people, David shows an inordinate mental flexibility, is curious, tolerant of ambiguity, enjoys problem solving and is willing to take certain risks. The greatest risks he takes are social ones and he is constructively critical when he

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is dissatisfied with social injustices. Yet he can be very timid and insecure when offering opinions in other areas. This block to creativity, as well as his admitted lack of self-confidence (i.e. self-discouragement), are evident only to him, but exist nonetheless.

David's interests are wide-ranging. He has interest in different social issues and different philosophies. He likes to travel to different countries and see different cultures. He went out of his way to experience various occupations while he was a student.

While David is interested in people and their environment, culture and philosophies, he is introverted and has little interest in interpersonal relationships, which in the itnerview he termed "transitional".

David is a creative person. He has fulfilled his definition of a creative person, i.e. he solves problems and comes up with his own conclusions and he is constantly striving and taking challenges. He, when asked, feels that he has reached "Ah! Ha!" and closure in his poetry, his solar home plans and in legal problem solving.

I have attempted to illustrate his creativity by using the literature and listing characteristics. To conclude, I feel David is creative and will continue to create and create and create . . .

Businessman

Interviewer: Diane Kaplan

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2. The responses clearly indicate that my subject is creative. Although I knew this throughout my life, I had never associated many of the characteristics of the creative individual with him. I have seen him react creatively to daily family problems or projects but tended to take him for granted. This interview helped me to explore areas of his life I may not have learned about otherwise. I referred back to my list of five important characteristics to see whether my subject possessed these traits. His sensitivity is something I have noticed for 26 years. He observes things that others, including myself, never perceive. His mental flexibility is evident when commenting on the creative things he has done: "thinking of completely different solutions, rather than building on something which has already been done". It is also apparent in his definition of creativity: "The ability to look at something and relate it to other things or problems; to expand what you see into other areas." His interest and the various projects he has undertaken may be an indication of his versatility. The fact that he is not easily discouraged and that he "will not settle for an unsatisfactory solution", shows that he is persistent and resistant to premature closure. He possesses that "restless urge" the "creative freedom of developing something new". Some other traits often associated with a creative person, which my subject possesses were also noted in the interview. He looks at confusion as a challenge and enjoys working out problems to satisfactory conclusions. He clearly states that he can abstract when he describes his problem solving process. Then, of course,

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he synthesizes when combining the elements to form the final product. He accepts the criticism of others but uses independent judgment to determine its validity. He also noted that he must please himself first but enjoys recognition by others. My subject knows he is creative and it is evident from this interview that he truly is.

Industrial Designer

Interviewer: Kathy Keeney

3. Before my interview with Dorothy I was not sure that she was not just a very organized person with a lot of vigorous enthusiasm for the projects she tackled. I was not aware of her writing and dramatic background and how she has carried this interest throughout her life.

However, since the interview I am firmly convinced that she is a creative person. In fact she is what we would describe as a transactualizing person. No matter where or what she is doing she is in charge. Her sense of purpose leads her to fruitful conclusions. This can be seen by reviewing a list of accomplishments.

Here is a judgment of Dorothy using the five characteristics used to describe a creative person:

a. OPENNESS - Dorothy is as open as I felt she would be when I started this interview.

b. RISK TAKER - After learning the extent that she went to in designing the baseball fields I would say that she took a very big risk. She is more creative in this area than I anticipated.

c. DISCIPLINED - She is the most disciplined person I know. I often felt in talking to her that this could someday be be detrimental to her health. She drives herself from a list of goals she has and never deviates. She persists to closure. In this area she is as creative as I thought she was.

d. RESOURCEFUL - Dorothy is more creative in this area than I had known. Because of her background in writing, costuming and dramatics she can meet new situations skillfully and promptly.

e. ENERGETIC - She is as creative energetically as I had anticipated. She has a strong need for closure and is not frustrated by set-backs or defeats.

I think Dorothy has reached the level of inventive creativity. She can take unusual pieces of material and natural things and create a work of art. She can write a book from her own ideas or design a costume from her imagination. From her standpoint her greatest accomplishment would have to be designing a 21-acre plot into a beautiful sports park for children.

Homemaker

Interviewer: Ann Antonius

4. The person that I interviewed is a man, 35 years old. He has completed all of the work for his doctorate in psychology except for his thesis, which he is working on at the present time. He works as a manager in an office of the Federal Emergency Control Agency.

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I chose this person for my interview because he has so many of the characteristics of a highly creative person. His life style is, in many ways, different from the "average" man. He is always looking for new ways to do routine things rather than doing them the same way each time as many of us do. In cooking, for example, he hardly ever makes a dish the same way twice. He is constantly looking for new ways to improve things. Also, he is very sensitive to other people and tries to help others with their problems. He expresses feelings and emotions quite freely. He is very intuitive in his thinking. He enjoys fantasy, such as the Disney cartoons, as much as my young children. He is also very persistent and shows great perserverence when engaged in a creative activity such as writing his thesis.

I had thought of this person to be quite creative. After the interview I now see him as even more creative than I had originally thought. I had not fully understood his reasoning in not changing his thesis topic. Now I understand that he pursues it not to get his degree, necessarily, but because he feels that his topic will make a unique contribution to the field of psychology. Making this contribution to his field is even more important to him than the personal goal of getting his degree.

Another reason that I think of his creativity as high is because he has such a need to be unique. He obviously has spent a lot of time, starting in childhood, questioning the structure of the educational system and of society and then figuring out how he could break away from this structure to become a unique person. He took

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situations which were initially stifling to creativity, such as the teachings of the church and the educational system, and turned them into experiences which generated his creativity by figuring out how to break away from their structure.

His definition of creativity, that it is the process of being engaged in an activity rather than the finished product, also impressed me. It goes along with the definition of creativity that we used in class, a process rather than a product.

He is obviously very willing to try new things, to take a risk. This was brought out when he mentioned going into psychotherapy and into rolffing for self-improvement.

Another indication of his creativity, in my opinion, is the way he writes down his ideas and then goes back to them to find new angles of the ideas, or to come up with another idea relating to an earlier one. I was also impressed with his ability to verbalize so well his mental processes.

I feel that I am fortunate to know this person. He is a very caring person. He is one of the few people I know who, when he asks "How are you?" really wants to know the answer. He has helped me with problems many times, in many ways. Having a conversation with him is very stimulating beacuse of his ability to analyze situations and to come up with new ideas. I am grateful to him for making the time tc come to visit and do this interview with me.

Office Manager; Doctoral Student

Interviewer: Helen Lawrence

5. Jan is just as creative as I thought she was. From the very first time I met her I knew I would like her. I knew she was different. During one of our first conversations she told me that before their children were born she would go for four to six month stretches without making the same meal twice. How often do you meet someone like that?

Her approach to problems was always so unique. She always saw things from a slightly different angle than anyone else.

I am still frequently impressed with the games and activities she creates for her children. She is so unlike other mothers who drill their children to perform for others. Her goal is to teach the children to grow, to develop their capacity to think and evaluate rather than to recite.

Jan is a sensitive person who has had her "geranium clipped" many times in committee situations. She finds it especially intolerable that people pronounce judgment on ideas she throws out before the group has had time to consider them.

It's obvious that she derives great benefit from her husband's encouragement and tolerance.

It was a pleasure to conduct this interview and to find that what I suspected was true.

Homemaker, Degree in Early Childhood
Interviewer: Michele Bhame

6. From my observations and interview I have drawn the conclusion that Ron is a highly creative person. He is as highly creative as I assumed him to be.

Ron likes to think. He likes to dream up new ideas while also being extremely interested in others' ideas so that he may manipulate and expand upon them. He is an achieving person and demonstrates high energy in solving a problem as well as in recreational activiites. He is always looking for ways to improve and expand upon existing ideas, problems and experiences. He exhibits the need for improvement in all areas of his life whether it be socially, emotionally, intellectually, or job-related. Ron is adventurous and enjoys risk-taking immensely. Challenges excite him either work-related or those related to recreation. He also has a wide range of interests and hobbies as he enjoys trying new things. Self-sufficiency seems to be one of Ron's major traits. He is independent in his relationship with others. He is also independent in making decisions although he welcomes others' ideas and input. He feels the need for mastery of a problem if it seems important and/or relevant to him.

Ron is a very open and empathic person; he is sensitive to the needs of others. Although Ron is very independent he does seem to enjoy the company of others although not all of the time. He considers himself highly creative and seems to feel very comfortable with himself while at the same time always looking for ways to improve all areas of his life.

School proved to be rather difficult for Ron and his teachers. He tended to be disruptive and teachers had a hard time handling him. Ron also daydreamed quite a bit as it was later found he was bored with what was being taught. In high school he was thought to be "crazy" by teachers and many of his peers. His ideas were

wild even to the psychiatrists whom he was referred to see during this time. Criticism and judgment did not deter him, however. He would follow through on his wild ideas anyway.

Many characteristics of Ron's personality seem to be very consistent with those found to be associated with the highly creative person. I have mentioned these in the above paragraphs. Ron is expressively, technically, and inventively creative. I would assess him as being in the inventive category of creativity at this point in his life. As Ron is still rather young it may be quite possible that he surpasses the inventive stage and moves on to being innovative. My hypothesis that Ron is a highly creative person seems to have been proven correct as I have made comparisons from my observation and interview to those characteristics found by various studies of very creative people.

Business Owner.

Interviewer: Deborah J. Rumer

7. So many qualities of a creative person were demonstrated throughout the interview that it is diffucult to know where to begin. Obviously, the use of imagination is the foremost quality. Bob's own words indicate the desire to "come up with an original approach." His works of art constantly tell imaginary stories. To be able to maintain such imagination requires an open mind, once again demonstrated by Bob's words about letting one's surroundings and current events lead to creative ideas.

Persistency quite definitely is shown by the fact that Bob mentioned one or two <u>years</u> of thinking about various ideas until

he worked them through to a coherent, imaginary end that was his "story". In addition, he has used different approaches and has thought through various solutions to roadblocks in both art and in writing music, which demonstrates a great deal of flexible thinking.

Of course, not all of Bob's ideas are original, although many are. His ability to "put one and one together" to reach a goal is a beautiful display of the quality of elaboration. He finds it easy to use his imagination to expand and develop ideas. Examples of this would be his pictures that resulted from the near catastrophe of Three Mile Island and his series about a "Fat People World" that resulted from his observations of human nature.

Bob has progressed through several levels of creativity. The first level, being expressive creativity, is shown through his musical ability and artistic ability. The second level, which can be considered to be productive creativity, has been reached also. He constantly strives to improve his technique, whether it is in art or music.

Inventive creativity, the third level, has also been demonstrated by Bob's ability to "solve an old problem a new way". This is also very evident in his artwork. He tries to take his ability and do something new and original with it--something that has not been done before.

I believe that Bob has also reached the fourth level of creativity, which is innovative creativity. An example of this would be his story of a "Fat People World". He not only has made observations of human nature, but has transformed what he has seen

into an imaginary story. He has likened the gluttony he sees to a rat-like society. He has made his people small, fat, and greedy. He has taken an idea and done something completely new with it. He has added another dimension to an observation of our society.

The fifth and highest level of creativity is emergent creativity. It is conceivable that Bob may one day reach this level. If his ideas continue to express new and original statements about our society, perhaps his art may one day be seen as specific style, as have Realism, Surrealism, Impressionism, and other styles. It may also be seen as indicative of our period of history.

Bob's answers to my questions showed a deep perceptive quality and showed that a great deal of thinking has gone on in his life. Many of his partial answers and examples have been edited from this paper, as he was constantly using verbal examples to enhance the spoken word. He mentioned that it is rare that he has spoken of such inner feelings, and I'm sure that is one reason why many of the answers were lengthy, yet illustrative.

This interview has ignited a spark in my own creative feelings. I now have a better grasp on how to go about thinking through an idea to make it work to a better end. Hopefully, as a result of both this class and the interview, I will be better able to notice and foster creativity in my own work.

Artist, Musician

Interviewer: Sandra Lynn Forte

8. As soon as I called Donna, I knew that I had made the right decision in choosing her for my interview. Her creativity seemed to leak out of her, every time she opened her mouth. I had recognized her as being creative, as each individual is, from the start. But after intensely studying the subject of creativity for the past weeks, it was fascinating to see a highly creative individual right in front of me. My appreciation of her talents was soon magnified a hundred-fold.

As I talked to her, the qualities that she exhibited were so often those of the creative individual, that we have been discussing. I am now willing to go out on a limb and claim that she is a highly creative individual.

Donna is an achieving person. She enjoys work and she loves to do well at her attempts. I feel that she sets high goals for herself, then attempts to attain them. She is self-assertive and has strong leadership abilities. She seems to enjoy being in charge in a leadership position and she does it well.

Donna is uninhibited. She isn't afraid to express herself whether it be in hearty laughter or genuine tears. She "tells it like it is" when called upon to do so. However, she is extremely sensitive to the feeling and thoughts of others and would never deliberately hurt another. She is a caring person. The opinions of others are important to her. I felt during our discussion that she truly cared what I thought and was open and willing to accept my ideas if they proved to be better than hers.

Although she feels lacking in self-discipline, I found that she is persistent about things that mean a great deal to her. She

said that she wouldn't think of leavinga problem concerning another individual "up in the air" without seeing it through. In our church when she has taken various assignments, it has been evident that she is energetic and thorough. She is a responsible person.

Donna is independent. She is her own person. She enjoys others tremendously, but she doesn't need others to feel happy and fulfilled. Although she cares about the opinions of others, she still usually does her own thing.

As you can see in the dialogue, Donna's speech is colorful, exacting and precise. The entire conversation was lively and intense; full of imagery and clever comparisons. Watching her is intriguing as her ability to express herself is not limited to her fluency. Her eyes, hands, and body movements all generate the feelings that she is attempting to transmit. Her entire being is expressive.

Her enjoyment and appreciation of the arts is obvious. Just talking about Horowitz causes her to weep. The piano is the central piece of furniture in her living room. She claims that music is the vent for her emotions. During the course of the conversation, other aspects of her love of the arts came through. She also finds pleasure and beauty in the visual arts. She has been intrigued with the study of creative movement. This past winter she completely organized and scheduled an entire six-week period in our church, devoted to the arts.

Donna enjoys creating. She claims pleasure in sitting down with piles of books in front of her so that she can write. She

stated that what she does is synthesize the mechanics and intellect of others in order to create a product that is her own. Her sense of wonder at God's creation is obvious. For example, when she tries to truly grasp the concept of millions of miles; her fascination with enormity.

Donna enjoys humor and we spent a good amount of time laughing as we played with words during our discussion. She said that humor helps us to keep our sanity.

When I left Donna that day, I was stimulated, yet drained. I felt as though I had been through a therapy session of my own. She is truly a remarkable woman that I have grown to respect and admire. I am unable to pinpoint exactly what form of creative person that she is as she is so diverse and well rounded. She is obviously expressive in almost all facets of her life. She is technical in her accomplishments as a pianist and piano teacher. Donna is also inventive in creation of new programs and her solutions in helping others to solve their problems. It is during this problem solving of hers that I find the creative process most evident.

I thoroughly enjoyed working with Donna. The discussion was challenging and stimulating for both of us. I have full intentions of continuing our discussion at a later date.

Writer

Interviewer: Lynne Corle

9. I can't tell you how good I, personally, feel about this interview. It was one of the best experiences I've had in quite some time. Suzanne said it sure was hard work, but she, too had

very good feelings about the discussion we had. It's almost too easy, picking out signs of a creative person from the text. I'll use a list format and present my "clues":

a. Suzanne's sophisticated list of adjectives to describe a creative person.

b. Suggestion that there be no RIGHT or WRONG in her class.

c. Sensitivity to the way 2-year-olds think, how they experience things.

d. Finding a job adaptable to her lifestyle (part time, child-centered, flexible program).

e. Her love of "spur-of-the moment" lesson changes.

f. The NEED to work at the potter's wheel or be "grumpy".

g. Constantly new and changing artistic style - motivation to keep growing through workshops and classes.

h. The importance of criticism from respected colleagues vs. unimportance of casual comments from the man on the street.

i. Willingness to try anything once, and see "how it feels."

j. Importance of friendships that will adapt to and understand her lifestyle.

k. Personal life - lots of art related activities, and manual, joie-de-vivre things!

l. Refusal to become a secretary - commitment to her own life-style to the point of divorce.

m. Awareness that she does, sometimes, "play it safe" for financial reasons.

n. Countering the "play it safe" attitude with workshops, classes, and travel.

o. Commitment to be a professional

p. Encouragement for everyone to be more playful and relaxed, "do something absurd."

q. Living day-to-day, but with LOTS of things happening and evolving all the time.

Owner of Ceramics Business

Interviewer: Sally McKeever

10. After the interview, I saw my subject as a highly creative person within his job, his area of research, his scientific pursuits. He has a busy schedule and we had no time to explore question areas beyond the scientific realm. So, I can't judge my subject's creativity in his life away from the laboratory.

I will be interested to continue to observe him as I come into contact with him to see what characteristics are evidenced in his personal life. He's an interesting person, and I enjoyed the opportunity of seeing him in a different light.

I brought many subjective criteria to my evaluation of him as a creative person. My judgment was based on a combination of what was said during the interview, a classroom induced awareness of the characteristics of creative people, and an understanding sensitivity to the environment in which he works.

The beginning of the interview was somewhat "stiff" with both participants slightly nervous. My subject seemed justifiably somewhat apprehensive. After all, I was the wife of one of his colleagues, and I was tape recording the conversation. Questions

about my motives and use of the interview material, as well as questions about his working environment, might have sparked some apprehensions.

His answers to the beginning questions were well thought-out, formal, very scientific, the type of thing that might have appeared after a newspaper interview.

The latter part of the interview was more interesting to me because he relaxed and became more philosophical. It was during this shorter question-answer period that I felt I learned more about him and his personality. He talked more easily and openly. (After the interview he mentioned that he enjoyed the philosophical part of our conversation and wouldn't mind pursuing that some time.)

His perseverence is an obvious trait. He has worked for 20 years on research. Many times he has come to a dead-end; an experiment hasn't worked. He appreciates the frustrations of his job but doesn't give up. He always finds a new way to approach the problem and continues onward. He seems challenged by the impossible, by what can't be done, by finding a way to solve a problem. He values follow-through. He likes to finish a project, to reach closure.

He enjoys the excitement and exhilaration of finding an answer. Even when outside rewards are few and efforts are unappreciated by others, he seems very self-satisfied. He appears somewhat reserved and quiet but very self-contained. He seems happy with himself and his work.

His laboratory appeared neat and well organized. He has many technicians and students working with him. He seems open to others' ideas, appreciative of their abilities. He encourages them. Yet,

he makes the final decisions and is definitely in control. He finds the physical isolation of the laboratory no great drawback. The interpersonal relationships are secondary to his work. He's self-sufficient, self-disciplined, self-motivated. He likes to "get on with the serious business of his work".

He finds interacting with other scientists extremely important in broadening his knowledge. He keeps abreast of current developments through reading professional journals, going to scientific meetings, etc. He's well-informed, up-to-date with information in his area. And, he shares results of his experiments via many published articles and via talks at national meetings. He has a capacity for hard work.

He says he likes to use his imagination, to think, to dream. He likes to play with old ideas and put them together in new ways. He likes to toy with possibilities and look into unusual, different approaches. He asks himself "why?" and "how?" He uses his intuition sometimes and says, "Let's try it anyway." He's curious and likes to explore. He's open to new ideas also. He finds the complexity of inter-relationships in his field challenging.

He appreciates the academic freedom offered by the institution for which he works. His isolation offers him the ability to be independent in his work and thinking. He has few restrictive, structured institutional controls. He appreciates that this freedom is accompanied by a need to be competitive for outside funding for his research. This can create many "blocks" to creativity (pure vs. applied research, lack of equipment and facilities, etc.).

My subject has a humane attitude. He is aware of and motivated by a higher goal of helping mankind. He sees his experimentation as a model being directly applicable to human beings. He feels that he may be able to help solve the problems of world hunger in some way.

Research Scientist

Interviewer: Marian Whitlock